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☐ 1: Stohl EA, Criss AK, Seifert HS. [Related Articles, Links](#)

The transcriptome response of *Neisseria gonorrhoeae* to hydrogen peroxide reveals genes with previously uncharacterized roles in oxidative damage protection.
Mol Microbiol. 2005 Oct;58(2):520-32.
PMID: 16194237 [PubMed - in process]

☐ 2: Yu FL, Liu HJ, Lee JW, Liao MH, Shih WL. [Related Articles, Links](#)

Hepatitis B virus X protein promotes cell migration by inducing matrix metalloproteinase-3.
J Hepatol. 2005 Apr;42(4):520-7. Epub 2005 Jan 8.
PMID: 15763339 [PubMed - indexed for MEDLINE]

☐ 3: Diaz C, Valverde L, Brenes O, Rucavado A, Gutierrez JM. [Related Articles, Links](#)

Characterization of events associated with apoptosis/anoikis induced by snake venom metalloproteinase BaP1 on human endothelial cells.
J Cell Biochem. 2005 Feb 15;94(3):520-8.
PMID: 15543558 [PubMed - indexed for MEDLINE]


☐ 4: Minnasch P, Yamamoto Y, Ohkubo I, Nishi K. [Related Articles, Links](#)


Demonstration of puromycin-sensitive alanyl aminopeptidase in Alzheimer disease brain.
Leg Med (Tokyo). 2003 Mar;5 Suppl 1:S285-7.
PMID: 12935612 [PubMed - indexed for MEDLINE]


☐ 5: Bamba S, Andoh A, Yasui H, Araki Y, Bamba T, Fujiyama Y. [Related Articles, Links](#)


Matrix metalloproteinase-3 secretion from human colonic subepithelial myofibroblasts: role of interleukin-17.
J Gastroenterol. 2003;38(6):548-54.

PMID: 12825130 [PubMed - indexed for MEDLINE]


-  **6:** Dreys J, Laus C, Mendinger M, Schmidt-Gersbach C, Unger C. [Related Articles, Links](#)

 Antiangiogenesis: current clinical data and future perspectives.
Onkologie. 2002 Dec;25(6):520-7. Review.
PMID: 12566896 [PubMed - indexed for MEDLINE]


-  **7:** Kanekura T, Chen X, Kanzaki T. [Related Articles, Links](#)

 Basigin (CD147) is expressed on melanoma cells and induces tumor cell invasion by stimulating production of matrix metalloproteinases by fibroblasts.
Int J Cancer. 2002 Jun 1;99(4):520-8.
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-  **8:** Spinale FG. [Related Articles, Links](#)

 Matrix metalloproteinases: regulation and dysregulation in the failing heart.
Circ Res. 2002 Mar 22;90(5):520-30. Review.
PMID: 11909815 [PubMed - indexed for MEDLINE]


-  **9:** Marchenko GN, Strongin AY. [Related Articles, Links](#)


 MMP-28, a new human matrix metalloproteinase with an unusual cysteine-switch sequence is widely expressed in tumors.
Gene. 2001 Mar 7;265(1-2):87-93.
PMID: 11255011 [PubMed - indexed for MEDLINE]


-  **10:** Randal J. [Related Articles, Links](#)

 Antiangiogenesis drugs target specific cancers, mechanisms.
J Natl Cancer Inst. 2000 Apr 5;92(7):520-2. No abstract available.
PMID: 10749899 [PubMed - indexed for MEDLINE]

-  **11:** Kornman KS. [Related Articles, Links](#)

 Host modulation as a therapeutic strategy in the treatment of periodontal disease.
Clin Infect Dis. 1999 Mar;28(3):520-6. Review.
PMID: 10194070 [PubMed - indexed for MEDLINE]

-  **12:** Juul A, Andersson AM, Pedersen SA, Jorgensen JO, Christiansen JS, Groome NP, Skakkebaek NE. [Related Articles, Links](#)

 Effects of growth hormone replacement therapy on IGF-related parameters and on the pituitary-gonadal axis in GH-deficient males. A double-blind, placebo-controlled crossover study.
Horm Res. 1998;49(6):269-78.

PMID: 9623518 [PubMed - indexed for MEDLINE]

- 13: [Evans JD, Ghaneh P, Kawesha A, Neoptolemos JP.](#) [Related Articles, Links](#)



Role of matrix metalloproteinases and their inhibitors in pancreatic cancer.

Digestion. 1997;58(6):520-8. Review.

PMID: 9438596 [PubMed - indexed for MEDLINE]

- 14: [Kamiguti AS, Desmond HP, Theakston RD, Hay CR, Zuzel M.](#) [Related Articles, Links](#)



Ineffectiveness of the inhibition of the main haemorrhagic metalloproteinase from Bothrops jararaca venom by its only plasma inhibitor, alpha 2-macroglobulin.

Biochim Biophys Acta. 1994 Aug 18;1200(3):307-14.

PMID: 7520756 [PubMed - indexed for MEDLINE]

- 15: [Gentile F, Salvatore G.](#) [Related Articles, Links](#)



Preferential sites of proteolytic cleavage of bovine, human and rat thyroglobulin. The use of limited proteolysis to detect solvent-exposed regions of the primary structure.

Eur J Biochem. 1993 Dec 1;218(2):603-21.

PMID: 8269951 [PubMed - indexed for MEDLINE]

- 16: [Mymryk JS, Bayley ST.](#) [Related Articles, Links](#)



Induction of gene expression by exon 2 of the major E1A proteins of adenovirus type 5.

J Virol. 1993 Dec;67(12):6922-8.

PMID: 8230413 [PubMed - indexed for MEDLINE]

- 17: [Macfarlane GT, Cummings JH, Macfarlane S, Gibson GR.](#) [Related Articles, Links](#)



Influence of retention time on degradation of pancreatic enzymes by human colonic bacteria grown in a 3-stage continuous culture system.

J Appl Bacteriol. 1989 Nov;67(5):520-7.

PMID: 2480341 [PubMed - indexed for MEDLINE]

- 18: [Cawston TE, McLaughlin P, Hazleman BL.](#) [Related Articles, Links](#)




Paired serum and synovial fluid values of alpha 2-macroglobulin and TIMP in rheumatoid arthritis.


Br J Rheumatol. 1987 Oct;26(5):354-8.

PMID: 2444303 [PubMed - indexed for MEDLINE]

- 19: [Kirkpatrick CJ, Melzner I, Goller T.](#) [Related Articles, Links](#)

-  Comparative effects of trypsin, collagenase and mechanical harvesting on cell membrane lipids studied in monolayer-cultured endothelial cells and a green monkey kidney cell line.
Biochim Biophys Acta. 1985 Jul 30;846(1):120-6.
PMID: 2990575 [PubMed - indexed for MEDLINE]

☐ **20:** [Skidgel RA, Davis RM, Erdos EG.](#) [Related Articles, Links](#)

-  Purification of a human urinary carboxypeptidase (kininase) distinct from carboxypeptidases A, B, or N.
Anal Biochem. 1984 Aug 1;140(2):520-31.
PMID: 6486437 [PubMed - indexed for MEDLINE]

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L1	2782	metalloproteinase or metalloprotease	USPAT	OR	OFF	2005/11/14 21:11
L2	326	I1 near4 (human or sapien)	USPAT	OR	OFF	2005/11/14 21:12
L3	0	I1 near4 ("520")	USPAT	OR	OFF	2005/11/14 21:12
L4	727	((molecular adj weight) or (size)) near4 ("520")	USPAT	OR	OFF	2005/11/14 21:13
L5	0	I2 and I4	USPAT	OR	OFF	2005/11/14 21:13

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=> s s l1 (4A) (human or sapien)
MISSING OPERATOR S L1
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=> s ((molecular weight) or (size)) (4A) (520)
L2 414 ((MOLECULAR WEIGHT) OR (SIZE)) (4A) (520)

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=> s l1 (4A) (human or sapien)
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NEWS 7 SEP 09 ACD predicted properties enhanced in
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=> s Casein (4A) (degrade or degradation or cleave or cleaving or
degraded or degrading or cleaved)
L1      3496 CASEIN (4A) (DEGRADE OR DEGRADATION OR CLEAVE OR
CLEAVING OR
        DEGRADED OR DEGRADING OR CLEAVED)
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=> s Casein (4A) (protease or proteinase or peptidase)
L2      2884 CASEIN (4A) (PROTEASE OR PROTEINASE OR PEPTIDASE)
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=> s Casein (4A) (industrial or commercial or feed)

L3 1669 CASEIN (4A) (INDUSTRIAL OR COMMERCIAL OR FEED)

=> s l1 and l2 and l3

L4 1 L1 AND L2 AND L3

=> d l4 bib ab

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1972:524924 CAPLUS

DN 77:124924

TI Immunochemical studies on milk components. V. Comparative examination on

the antigenicity of **casein** hydrolyzed by some **proteases**

AU Tokita, Fumisaburo; Takahashi, Fujio

CS Coll. Agric., Shinshu Univ., Ina, Japan

SO Milchwissenschaft (1972), 27(7), 422-6

CODEN: MILCAD; ISSN: 0026-3788

DT Journal

LA English

AB Expts. were carried out to determine the antigenic properties of casein

hydrolyzed by various **com. proteases** from animals, microorganisms, and a plant. Nagarse (*Bacillus subtilis*) and fungal

(*Aspergillus oryzae*) enzymes had high proteolytic activities against

casein, and considerable losses of the antigenic activities were found in

the hydrolyzates. Pronase-P (*Streptomyces griseus*) also had high proteolytic activity against casein but low antigenic activity was

retained in the hydrolyzate for a relatively long time. The antigenic

activities of casein hydrolyzed by pancreatin, pepsin, and papain gradually decreased and were almost destroyed after 9 hr. The casein

hydrolyzed by trypsin, α -chymotrypsin, pepsin and rennin kept relatively high antigenic activity, even after 9 hr. The decrease or

elimination of the antigenic activity of casein was greatly influenced by

the proteolytic activity and substrate specificity of the protease used.

Furthermore, it may be presumed that the antigenic structure of **casein** is **cleaved** effectively by a protease having pepsin-like substrate specificity. When casein was hydrolyzed by rennin,

pepsin, and trypsin, or by pepsin and trypsin successively, the lowering

or elimination of the antigenic activity of casein was mainly affected by

the rate of hydrolysis of casein by pepsin. The antigen values of casein

were decreased more rapidly by trypsin after partial hydrolysis
by pepsin
at pH 2.0 than by trypsin alone.

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L5 39 L2 AND L3

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=> d l6 bib ab

L6 ANSWER 1 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:490739 CAPLUS

DN 141:59701

TI **Caseins** as cysteine **protease** inhibitors

IN Katunuma, Nobuhiko; Yamada, Akio; Kawaguchi, Yasushi; Takakura,
Natsuko

PA Morinaga Milk Industry Co., Ltd., Japan

SO PCT Int. Appl., 49 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.
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DATE

PI	WO 2004050118	A1	20040617	WO 2003-JP14263
	20031110			

W: AU, CA, CN, ID, JP, KR, NO, NZ, US

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR,
HU, IE,

IT, LU, MC, NL, PT, RO, SE, SI, SK, TR

	CA 2481489	AA	20040617	CA 2003-2481489
	20031110			

	US 2005148504	A1	20050707	US 2003-510088
	20031110			

	EP 1568377	A1	20050831	EP 2003-812286
	20031110			

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT,

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
SK

	NO 2004004258	A	20041028	NO 2004-4258
	20041007			

PRAI JP 2002-347801 A 20021129
JP 2003-147035 A 20030523
WO 2003-JP14263 W 20031110

AB Disclosed is a cysteine protease inhibitor containing, as the active ingredient, casein which is a milk-origin protein, a peptide fragment of casein and/or a hydrolyzate of casein. This cysteine protease inhibitor is usable in preventives and remedies for osteoporosis, malignant tumoral hypercalcemia, breast cancer, prostatic cancer, periodontal disease, bacterial or viral infection, etc. as well as foods, drinks, feeds and so on.

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
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=> d 16 1-31 bib ab

L6 ANSWER 1 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:490739 CAPLUS

DN 141:59701

TI **Caseins** as cysteine **protease** inhibitors

IN Katunuma, Nobuhiko; Yamada, Akio; Kawaguchi, Yasushi; Takakura, Natsuko

PA Morinaga Milk Industry Co., Ltd., Japan

SO PCT Int. Appl., 49 pp.

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DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.
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PI	WO 2004050118	A1	20040617	WO 2003-JP14263
	20031110			

W: AU, CA, CN, ID, JP, KR, NO, NZ, US

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,

IT, LU, MC, NL, PT, RO, SE, SI, SK, TR

	CA 2481489	AA	20040617	CA 2003-2481489
	20031110			

	US 2005148504	A1	20050707	US 2003-510088
	20031110			

	EP 1568377	A1	20050831	EP 2003-812286
	20031110			

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
SK

NO 2004004258 A 20041028 NO 2004-4258
20041007

PRAI JP 2002-347801 A 20021129
JP 2003-147035 A 20030523
WO 2003-JP14263 W 20031110

AB Disclosed is a cysteine protease inhibitor containing, as the active

ingredient, casein which is a milk-origin protein, a peptide fragment of

casein and/or a hydrolyzate of casein. This cysteine protease inhibitor

is usable in preventives and remedies for osteoporosis, malignant tumoral

hypercalcemia, breast cancer, prostatic cancer, periodontal disease,

bacterial or viral infection, etc. as well as foods, drinks, feeds and so

on.

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:631382 CAPLUS

DN 141:156323

TI Manufacture of complexes of casein-bound calcium or colloidal calcium with

phosphopeptides

IN Toba, Yasuhiro; Takada, Yukihiro; Kawakami, Hiroshi; Aoki, Takayoshi

PA Snow Brand Milk Products Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.
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DATE

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PI	JP 2004215521	A2	20040805	JP 2003-4211
	20030110			

PRAI	JP 2003-4211		20030110	
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AB The complexes, which are useful for prevention and treatment of osteoporosis, fracture, arthritis, low back pain, etc., are used by

adding to drugs, foods, and feeds, are manufactured by hydrolyzing

casein micelles with proteinases, adjusting the hydrolyzates at pH ≤ 5.4 , removing insol. peptides and unhydrolyzed

caseins, and adjusting the solution containing casein-bound Ca and/or colloidal

Ca and phosphopeptides to pH ≥ 6.6 . Thus, casein micelles, prepared

by treating skim milk with rennets, were suspended in H₂O and treated with

trypsin at 37° for 6 h. The hydrolyzate was adjusted to pH 4.6 with HCl, stirred for 30 min, and centrifuged. The supernatant was

adjusted to pH 9.0 with NaOH, filtered through a ultrafilter (cut-off mol.

weight 30,000 Da), and freeze-dried to give complexes of casein-bound Ca and

colloidal Ca with phosphopeptides as white powders.

L6 ANSWER 3 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:818758 CAPLUS

DN 142:154517

TI Release of short and proline-rich antihypertensive peptides from casein

hydrolysate with an *Aspergillus oryzae* protease

AU Mizuno, S.; Nishimura, S.; Matsuura, K.; Gotou, T.; Yamamoto, N.

CS R&D Center, Calpis Co., Ltd., Kanagawa, 229-0006, Japan

SO Journal of Dairy Science (2004), 87(10), 3183-3188

CODEN: JDSCAE; ISSN: 0022-0302

PB American Dairy Science Association

DT Journal

LA English

AB Angiotensin-I converting enzyme inhibitory activities were measured after

hydrolysis of **casein** by 9 different **com.** available

proteolytic enzymes. Among these enzymes, a protease isolated from

Aspergillus oryzae showed the highest angiotensin-I converting enzyme

inhibitory activity per peptide. The *A. oryzae* peptide also showed the

highest antihypertensive effect in spontaneously hypertensive rats when

the systolic blood pressure was measured 5 h after oral administration of

32 mg/kg of various enzymic hydrolyzates. Significant antihypertensive

effects were observed with dosages of 9.6, 32, and 96 mg of the *A. oryzae*

peptide/kg of body weight (BW), and the effects were dependent on these

peptide dosages. Anal. of peptide length showed the *A. oryzae* hydrolyzate

was the shortest of all tested casein hydrolyzates; the peptide mixture had

an average value of 1.4 amino acids (AA) in the sequence. To further

characterize the A. oryzae hydrolyzate, the authors analyzed the AA sequence of the whole peptide mixture Various AA were detected at the first AA position, however, an increased number of Pro residues were observed at the second and third position of the A. oryzae hydrolyzate. No strong signals were detected after the fourth AA position of the A. oryzae hydrolyzate. These results suggest that the casein hydrolyzate of A. oryzae, which expressed potent antihypertensive effects in spontaneously hypertensive rats, mainly contain short peptides of X-Pro and X-Pro-Pro sequences.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1999:530288 CAPLUS

DN 131:169647

TI Casein hydrolyzate and its production method.

IN Hayazawa, Hironori; Miyakawa, Hiroshi; Echi, Hiroshi

PA Morinaga Milk Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.
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DATE

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PI JP 11225686	A2	19990824	JP 1998-44394
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19980210

PRAI JP 1998-44394	19980210
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AB The casein hydrolyzate has a hydrolysis rate of 8-15%, non-protein N

200-350 mg/g hydrolyzate, amino acid score of 100, no precipitation after heating

10 mins. at 100° at pH 4, and no off-odor and -taste. The casein hydrolyzate is useful for manufacturing feed, beverage, food, pharmaceutical,

etc.

L6 ANSWER 5 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1999:157207 CAPLUS

DN 130:291281

TI Immunostimulatory action of a commercially available casein phosphopeptide

preparation, CPP-III, in cell cultures

AU Hata, I.; Ueda, J.; Otani, H.
 CS Laboratory Food Bioscience, Faculty Agriculture, Shinshu University,
 Minamiminowa, 399, Japan
 SO Milchwissenschaft (1999), 54(1), 3-7
 CODEN: MILCAD; ISSN: 0026-3788
 PB VV-GmbH Volkswirtschaftlicher Verlag
 DT Journal
 LA English
 AB A **com.** available **casein** phosphopeptide preparation, CPP-III, mainly consisting of residues 1-32 of bovine α s2-casein and residues 1-28 of β -casein, enhanced the proliferative response induced by lipopolysaccharide (LPS), phytohemagglutinin (PHA), and Con A stimulation and the Ig production in mouse spleen cell cultures. CPP-III displayed a mitogenic activity in mouse thymocyte, nude mouse spleen cell and rabbit Peyer's patch cell cultures without LPS, PHA, and ConA. CPP-III displayed little mitogenic activity in mouse plastic-adherent cell cultures. The mitogenic activity of CPP-III for mouse spleen cells was hardly influenced by proteinase action such as pepsin, trypsin, chymotrypsin, and pancreatin, whereas it reduced when CPP-III was treated with acid phosphatase. The **com.** available **casein** phosphopeptide preparation, CPP-III, has an immunostimulating activity in cell cultures and the activity is attributable to the O-phospho-L-Ser residue, suggesting that the immunostimulating activity of CPP-III is relatively stable to proteinase action in GI tracts.

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 31 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
 DUPLICATE 1

AN 1998:478276 BIOSIS
 DN PREV199800478276

TI Simple tests for predicting the lytic behavior and protolytic activity
 lactococcal strains in cheese.

AU Boutrou, R.; Sepulchre, A.; Gripon, J. C.; Monnet, V. [Reprint author]

CS Unite Biochimie Structures Proteines, Inst. Natl. Rech. Agron., Domaine de
 Vilvert, 78352 Jouy-en-Josas Cedex, France

SO Journal of Dairy Science, (Sept., 1998) Vol. 81, No. 9, pp. 2321-2328.

print.

CODEN: JDSCAE. ISSN: 0022-0302.

DT Article

LA English

ED Entered STN: 5 Nov 1998

Last Updated on STN: 5 Nov 1998

AB The variations of the autolytic and proteolytic potential of lactococci

need to be taken into account because these variations probably influence

the development of organoleptic properties during cheese ripening. To

predict lytic capacity, proteolytic potential, and specificity of cell

surface-associated proteinase, we developed simple tests that were applied

to 26 industrial strains and a few reference strains of Lactococcus

lactis. The tests allowed us to measure the autolytic capacity of

lactococci in a buffer or in a pseudo curd under conditions that were

close to those of cheese ripening and to evaluate global peptidase

activity, **proteinase** activity, and specificity using **casein** or casein hydrolysate as a substrate. We confirmed the variability of the autolytic capacity of lactococci and

classified the

strains into three groups by low, moderate, or high lytic capacity

according to their behavior in the buffer and in pseudo curd tests.

Validation of the latter was obtained by the observation of similar lytic

behavior in the two reference strains of Lactococcus lactis, AM2 and

NCD0763, which were highly autolytic and poorly autolytic, respectively,

both in our tests and in previously reported cheese experiments.

The

global activities of peptidases and proteinase varied from 1 to 6 among

the strains. Most of the proteinases that were isolated from the highly

proteolytic **industrial** strains hydrolyzed beta-**casein** preferentially and, consequently, are more like the PI-type proteinase

than the PIII-type. We used simple, rapid methods to test a large number

of strains to predict their lytic behavior and proteolytic activity in

cheese.

L6 ANSWER 7 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:523144 CAPLUS

DN 129:275014

TI Production of caseinophosphopeptides (CPPs) from sodium caseinate using a

range of commercial protease preparations

AU McDonagh, David; FitzGerald, Richard J.

CS Teagasc, Dairy Products Research Centre, Cork, Ire.

SO International Dairy Journal (1998), 8(1), 39-45

CODEN: IDAJE6; ISSN: 0958-6946

PB Elsevier Science Ltd.

DT Journal

LA English

AB Sodium caseinate hydrolyzates were generated at laboratory-scale using 28 com.

protease prepns. of bacterial, fungal, plant and animal origin.

Caseinophosphopeptides (CPPs) were enriched from these

hydrolyzates by

calcium chloride aggregation at pH 7.5 followed by ethanol

precipitation of the

aggregates. CPP yield ranged from 3.4 to 16.0% (weight/weight)

of the original

protein. The calcium binding and solubilizing abilities of the

enriched

CPPs ranged from 0.40 to 0.61 and 7.4 to 24.0 mg Ca²⁺ mg⁻¹ CPP,

resp.

Hydrolysis of sodium caseinate with Bioprotease N100L resulted

in a 16.0%

yield of CPPs which could solubilize 19.1 mg Ca²⁺ mg⁻¹ CPP.

Significant

differences in the gel permeation and reversed-phase chromatog.

profiles

for the various enriched CPPs were evident. In general, no

apparent

relationship was observed between hydrolyzate degree of

hydrolysis (DH%), CPP

yield, CPP calcium binding and solubilizing abilities, and CPP

apparent

mol. mass distribution and hydrophobic peptide profiles.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 31 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

DUPLICATE 2

AN 1997:319116 BIOSIS

DN PREV199799609604

TI Functional and immunological properties of casein hydrolysate produced

from a two-stage membrane system.

AU Lin, Shih-Bin; Chiang, Wen-Dee; Cordle, Christopher T.; Thomas, Ronald L.

[Reprint author]

CS Dep. Food Science, Clemson Univ., Clemson, SC 29634-0317, USA

SO Journal of Food Science, (1997) Vol. 62, No. 3, pp. 480-483.

CODEN: JFDSA Z. ISSN: 0022-1147.

DT Article

LA English

ED Entered STN: 26 Jul 1997

Last Updated on STN: 26 Jul 1997

AB A uniform hydrolysate with a relatively low free amino acid content (lt

5%) was produced from bovine **casein** with a **commercial protease** (Alcalase) in a two-stage membrane reactor. The trichloroacetic acid soluble nitrogen was 98.68% and degree of hydrolysis

was 23.2% for the second-stage hydrolysate. The retained immunologically

active casein was 2.32% and whey protein was 1.09% in the hydrolysate as

determined by ELISA. The second-stage protein hydrolysate was completely

soluble at 2% (w/v) from pH 3.0 to 9.0. Water sorption increased two to

four times at water activities of 0.33 to 0.95 as compared to untreated casein.

L6 ANSWER 9 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1996:287866 CAPLUS

DN 124:319530

TI The activity of **commercial protease** to **casein** and powdered wool and the rate of loss in weight of wool

AU Takatuka, Tadashi; Yobiko, Yoshihiro; Joukou, Kyouhei; Kimura, Kazuomi

CS Osaka Prefect. Ind. Technol. Res. Inst., Osaka, 550, Japan

SO Sangyo Gijutsu Sogo Kenkyusho Hokoku, Gijutsu Shiryo (1996), 5, 60-3

CODEN: SGSGFF; ISSN: 0917-3927

PB Osaka-furitsu Sangyo Gijutsu Sogo Kenkyusho

DT Journal

LA Japanese

AB The activities of 30 kinds of **protease** to **casein** and powdered wool were measured to establish the evaluation standard for selection of

suitable protease to wool finishing. The relation of the rate loss in weight

of wool and the logarithmic concentrate of protease gave a straight line and the

slope of the line was adopted the ability index of loss in weight

L6 ANSWER 10 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1994:456417 CAPLUS
 DN 121:56417
 TI **Feeds** containing **casein** calcium hydrolyzates for fish culture
 IN Ito, Toshihiro; Kamigaki, Masahiro; Haneki, Takashi
 PA Taiyo Kagaku Kk, Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.
DATE	-----	----	-----	-----

PI	JP 06062765	A2	19940308	JP 1992-236425
	19920812			
	JP 3201840	B2	20010827	
PRAI	JP 1992-236425		19920812	

AB Feeds, which enhance absorption of minerals and proteins or N sources in cultured fish, contain casein Ca hydrolyzates. These hydrolyzates mainly contain peptides of mol. weight 1000-5000 and are manufactured by treatment of **casein** Ca with **protease** of *Aspergillus* sp. The feeds improve survival and growth rates of fish. Casein Ca powders were treated with Protease P "Amano" in H₂O at 45° for 20 h to manufacture the hydrolyzates. The hydrolyzates, which were intraduodenally administered to rats, showed a significant increase in amino acid uptake from the intestine.

L6 ANSWER 11 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1993:648906 CAPLUS
 DN 119:248906
 TI **Feeds** containing **casein** calcium hydrolyzates for young animals
 IN Ito, Toshihiro; Haneki, Takashi
 PA Taiyo Kagaku Kk, Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.
DATE	-----	----	-----	-----

PI	JP 05219898	A2	19930831	JP 1992-57160
	19920208			

PRAI JP 1992-57160 19920208
AB **Feeds** for young animals contain **casein** Ca hydrolyzates
(mainly containing peptides of mol. weight 1000-5000)
manufactured by treatment of
casein Ca with **protease** of Aspergillus sp. Casein Ca
hydrolyzates (manufactured with neutral protease of Aspergillus)
were
effectively absorbed in rats and were fed to piglets to show
greater body
weight increase than controls.

L6 ANSWER 12 OF 31 AGRICOLA Compiled and distributed by the
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(2005) on STN DUPLICATE 3

AN 94:29205 AGRICOLA

DN IND20384539

TI Growth of nonproteolytic Lactococcus lactis in culture medium
supplemented
with different casein hydrolyzates.

AU St-Gelais, D.; Roy, D.; Hache, S.; Desjardins, M.L.; Gauthier,
S.F.

AV DNAL (44.8 J822)

SO Journal of dairy science, Nov 1993. Vol. 76, No. 11. p.
3327-3337

Publisher: Champaign, Ill. : American Dairy Science Association.
CODEN: JDSCAE; ISSN: 0022-0302

NTE Includes references

CY Illinois; United States

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB The growth and lactic acid production of nonproteolytic variants
of

Lactococcus lactis, three Lactococcus lactis ssp. cremoris
strains (E8,

Wg2, and HP) and one Lactococcus lactis ssp. lactis strain
(1076), were

compared with those of their parent strains in Garches medium
supplemented

with different casein hydrolyzates. Molecular weight
distribution and AA

composition of casein hydrolyzates were different. Two
fractions of

alcalase casein hydrolyzates separated and concentrated by a
two-step

ultrafiltration process were compared with two **commercial**
casein hydrolyzates. **Proteinase**-negative variants of

lactococci exhibited the same specific growth rate and
production of

lactic acid as proteinase-positive strains in all enriched Garches media.

Cell growth was affected by molecular weight distribution of peptides in

hydrolyzates, but not by their AA composition. *Lactococcus lactis* ssp.

lactis grew better than *L. lactis* ssp. *cremoris*, but its lactic acid

production was similar to that of E8 strains. Among *L. lactis* ssp.

cremoris, Wg2 strains grew better in Garches medium supplemented with

casein hydrolyzates with molecular weight < 2000 Da, but growth and

lactic production of HP strains were better in Garches medium enriched

with casein hydrolyzates with molecular weight > 2000 Da. Different casein

hydrolyzate fractions could be used to supplement culture medium and to

standardize milk cultures: however, choice to casein hydrolyzates

depends on subspecies of lactococci.

L6 ANSWER 13 OF 31 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on

STN

DUPLICATE 4

AN 1993:297798 BIOSIS

DN PREV199396016023

TI Hydrolysis of casein by alcalase.

AU Camacho Rubio, F.; Gonzalez Tello, P.; Paez Duenas, M.; Marquez Moreno, M.

C.; Fernandez Cuadrado, V.

CS Dep. Ingenieria Quimica, Universidad de Granada, 18071 Granada, Spain

SO Revista Espanola de Ciencia y Tecnologia de Alimentos, (1993) Vol. 33, No.

1, pp. 59-70.

ISSN: 1131-799X.

DT Article

LA Spanish

ED Entered STN: 23 Jun 1993

Last Updated on STN: 3 Jan 1995

AB We have assayed the enzymatic hydrolysis of bovine **casein** using a **commercial protease**, Alcalase 0.6 L, at pH = 8.0 and 50 degree C. Kinetic treatment of the experimental data produced an

integral equation for the reaction rate, allowing us to evaluate the

degree of hydrolysis as a function of the operating conditions: the

initial concentrations of the enzyme and the substrate, and hydrolysis

time, with a deviation of less than 5%. The equation for the reaction rate supported the idea that the hydrolysis reaction was one of zero order with respect to the substrate and that a second order denaturalization of the enzyme took place simultaneously.

L6 ANSWER 14 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1993:123469 CAPLUS

DN 118:123469

TI In-vitro digestibility simulating the proteolysis of feed protein in the

midgut gland of grass shrimp (*Penaeus monodon*)

AU Lan, Chun Chieh; Pan, Bonnie Sun

CS Fish. Sci. Coll. Natl. Taiwan Ocean Univ., Keelung, Taiwan

SO Aquaculture (1993), 109(1), 59-70

CODEN: AQCLAL; ISSN: 0044-8486

DT Journal

LA English

AB Due to feed ingestion, maximal organ weight was reached in 1 h after feeding

for the foregut, and 5 h after feeding for the midgut where the highest

protease activity was observed in the whole digestive-tract of shrimp. The

proteases in the midgut gland showed two pH optima at 7.5 and 4.0, that at

pH 7.5 being higher. Feed proteins were digested in-vitro with crude

enzyme extract from the midgut gland of grass shrimp at 30°, pH 7.5

for up to 4 h and in two steps at pH 7.5 for 2 h followed by 2 h at pH

4.0. The latter increased feed protein hydrolysis to 1.12-1.56 times that

at pH 7.5 for 4 h. The two-step hydrolysis by the shrimp midgut gland

extract can serve as an in-vitro method to approx. feed protein digestibility. The tests showed the following order of

digestibility: Artemia>predissolved **casein**>gluten, pelletized shrimp feed>unpelletized shrimp feed>brown fish meal>white fish meal>soybean meal>yeast, undissolved casein. The protein

digestibility correlated with the amount of lysine and arginine in the total amino acid

composition of the protein sources, indicating that trypsin plays an important

role in digestion in shrimp. Aromatic amino acid content had a pos.

correlation with the digestibility of water-soluble or native protein

sources, but a neg. correlation with that of the heat-denatured protein

sources, indicating that hydrophobic interaction in heat-processed proteins decreased their digestibility.

L6 ANSWER 15 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1991:97243 CAPLUS

DN 114:97243

TI Causes of the decrease in fluorescence due to proteolysis of α -casein

AU Ostoa-Saloma, Pedro; Ramirez, Jorge; Perez-Montfort, Ruy

CS Inst. Fisiol. Cel., Univ. Nacl. Auton. Mexico, Mexico City, 04510, Mex.

SO Biochimica et Biophysica Acta, Protein Structure and Molecular Enzymology

(1990), 1041(2), 146-52

CODEN: BBAEDZ; ISSN: 0167-4838

DT Journal

LA English

AB Fluorescence decrease in casein solns. induced by proteolytic enzymes is

mainly due to cleavage of α -casein, and in particular to α S1-casein, which is quant. the main component of **com.**

casein. Treatment of α -casein with o-iodosobenzoic acid diminished its intrinsic fluorescence considerably and abolished

the

decrease in fluorescence induced by proteolytic cleavage. The

C-terminal

tryptophan (Trp) at position 199 in α S1-casein contributes

.apprx.30% to the overall effect, while the Trp at position 164 contributes about 70%. Treatment of α -casein with cyanogen

bromide

lowered the initial fluorescence of the preparation, but, in the resulting

fragment, trypsin still diminished some of the residual fluorescence. The

velocity of decrease in fluorescence correlates with the distance from the

Trp in position 164 at which the peptide bond is broken. This effect

seems to be rather unique for the caseins, but particularly for α S1-casin;

this is due to the existence of a Trp that is in the vicinity of hydrophobic amino acids and which upon hydrolysis, becomes

exposed to a

more hydrophilic environment.

L6 ANSWER 16 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1990:629974 CAPLUS

DN 113:229974

TI Modification of the functional properties of wheat flour by proteolytic

enzymes. Part 1. Activity against substrates in solution and rheological effects

AU Kieffer, Rolf; Rashed, Mohamed Magdy; Belitz, Hans Dieter
CS Kurt-Hess-Inst. Mehl-Eiweissforsch., Garching, D-8046, Germany
SO Zeitschrift fuer Lebensmittel-Untersuchung und -Forschung
(1990), 191(2),
104-9
CODEN: ZLUFAR; ISSN: 0044-3026

DT Journal

LA German

AB Since it is difficult to predict the effects of proteolytic enzymes used to regulate dough properties and the baking performance of flours from common activity methods with Hb or casein as substrates, more reliable methods were investigated by determining their activities with other substrates and correlating these with their rheol. effects in dough and gluten, measured by mixing (kneading resistance) and extension tests (resistance, extensibility). Interest was focussed on 2 industrial enzymes from *Aspergillus oryzae*, EL 34 and EL 36. Both enzymes were very active against Hb, but showed different rheol. effects. While EL 34 strongly weakened the dough, EL 36 exhibited no changes. A great variability of the specific activities of the investigated enzymes against Hb and azocasein was observed as well as against dissolved flour proteins. Altogether, the activities against substrates in solution were not correlated with rheol. effects in dough and gluten, systems of relatively low moisture content.

L6 ANSWER 17 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1988:222999 CAPLUS

DN 108:222999

TI Effect of tin-treatment on frictional electrification of protease-treated

Chinon fabric

AU Ishii, Kiyoshi

CS Hiroshima Bunkyo Women's Coll., Hiroshima, 731-02, Japan

SO Sen'i Gakkaishi (1987), 43(12), 644-9

CODEN: SENGAS; ISSN: 0037-9875

DT Journal

LA English

AB When Chinon fabric was treated with some proteases to introduce micro-voids by eliminating the protein component in its unit fibers,

frictional electrification of the fabric apparently increased.

The

electrification was effectively prevented by depositing insol.

tin

phosphate in the microvoids of the unit fibers. This effect was ascribed

to a significant increase in the elec. conductivity of the fabric by the insol.

and highly hygroscopic tin salt. Furthermore, the deposited salt was

mostly held in the fabric even after washing under home laundry conditions. Thus, the effect to prevent frictional

electrification was

considered to be practically durable in the protease-treated Chinon

fabric. It was also confirmed that the tin treatment as well as the

enzyme treatment gave no practical effect on various phys. properties of

Chinon fabric except for the frictional electrification and dyeing property.

L6 ANSWER 18 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1987:419765 CAPLUS

DN 107:19765

TI Effect of different samples of **casein** in the determination of **protease** inhibitory activities

AU Sujatha, S.; Udupa, S. L.; Pattabiraman, T. N.

CS Dep. Biochem., Kasturba Med. Coll., Manipal, 576 119, India

SO Indian Journal of Clinical Biochemistry (1987), 2(1), 14-20

CODEN: IJCBEY; ISSN: 0970-1915

DT Journal

LA English

AB Proteolytic activities of crystalline trypsin, α -chymotrypsin, and

elastase were .apprx.25, 25, and 50% higher, resp., with a purified sample

of **casein** compared to 4 other **com.** samples. The difference was not due to variations in endogenous **protease** activity in **casein**, which was negligible under the assay conditions. Studies with purified casein and a 2nd casein sample showed

that the decreased proteolytic activity with the latter was marked at

saturating levels of substrate and negligible at suboptimal levels, suggesting

that the 2nd sample of **casein** contained an endogenous,

reversible **protease** inhibitor. Measurement of protease inhibitory activity in serum and in jack fruit seed exts. with the 2 casein prepns. indicated that assay in the presence of the 2nd casein sample underestimated antitryptic activity to the extent of 28% and 29%, resp. Similarly, underestimations of antielastase activities were 25% and 36% in serum and the seed extract, resp. There was no difference in the estimated level of antichymotryptic activity with the 2 casein samples.

L6 ANSWER 19 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1987:551150 CAPLUS
 DN 107:151150
 TI Culture medium for isolation and selection of protease-producing microorganisms
 IN Padegimas, T.; Marmiene, I.; Jurgulis, A.; Petkeviciute, M.
 PA "Ferment" Scientific-Industrial Enterprises, USSR
 SO U.S.S.R.
 From: Otkrytiya, Izobret. 1986, (48), 96.
 CODEN: URXXAF

DT Patent
 LA Russian
 FAN.CNT 1

DATE	PATENT NO.	KIND	DATE	APPLICATION NO.
-----	-----	----	-----	-----
PI	SU 1280005	A1	19861230	SU 1984-3715864
	19840327			
PRAI	SU 1984-3715864		19840327	
AB	Active protease-producing strains of microorganisms are selected and isolated from a culture medium containing agar-agar 35.0-40.0, industrial casein 4.0-6.0, peptone 5.0-7.0, glucose 1.0-2.0, yeast hydrolyzate 1.0-2.0, CaCl ₂ 0.003-0.005, MgSO ₄ 0.005-0.007, and bromocresol purple 0.016-0.018 g/dm ³ H ₂ O.			

L6 ANSWER 20 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1987:614166 CAPLUS
 DN 107:214166
 TI Isolation of proteolytic enzymes
 IN Safarik, Ivo; Vodrazka, Zdenek
 PA Czech.
 SO Czech., 4 pp.
 CODEN: CZXXA9
 DT Patent
 LA Slovak

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.
DATE	-----	----	-----	-----
PI	CS 235405	B1	19850515	CS 1983-656
	19830202			
PRAI	CS 1983-656		19830202	
AB	Pancreatic and microbial proteases were purified by chromatog. on com. casein which was pretreated by heating 2-3 h at 190-250° and thoroughly washed. A glass column was packed with an aqueous suspension of modified casein. A mixture of casein hydrolyzate and a predetd. amount of trypsin was applied at the top, and Proteins were eluted with water. From the applied proteolytic activity, 13.4% went with the proteins and 75% was eluted with 1M (NH4)2SO4. Sp. activity of the purified enzyme preparation increased 10.6 times.			
L6	ANSWER 21 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN			
AN	1981:117483 CAPLUS			
DN	94:117483			
TI	Casein inhibition of Clostridium perfringens growth and exoprotease production			
AU	Curran, Joanne M.; Solberg, Myron; Blaschek, Hans P.; Rosen, David			
CS	Cook Coll., Rutgers, State Univ., New Brunswick, NJ, 08903, USA			
SO	Journal of Food Science (1981), 46(1), 169-73, 177 CODEN: JFDSAZ; ISSN: 0022-1147			
DT	Journal			
LA	English			
AB	Growth of C. perfringens 3624 on a defined medium containing ANRC Reference Casein as the N source was investigated. Gas production, monitored manometrically as an index of growth, indicated a depressed growth response of the organism in the casein-containing medium. Increased growth response resulting from pepsin treatment of the casein was largely due to the enzyme serving as a N source. Chelation of Fe by casein was not responsible for the growth inhibition. Casein suspended in complete medium was not inhibitory to the organism. Growth studies indicated that native casein was not available as a N source to the organism. Acid-hydrolyzed casein and			

com. casein hydrolyzate served as suitable N sources for growth of the organism; however, exoprotease production was repressed in both media as well as in media containing native casein as the sole N source. C. **perfringens** Produced exoprotease in a completely defined medium containing synthetic amino acids, indicating the possible presence of an amino acid or a metabolite, not produced in the casein-containing medium, which depressed the enzyme-synthesizing mechanism.

L6 ANSWER 22 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1982:405121 CAPLUS

DN 97:5121

TI The effect of feed protein and carbohydrate content on protease activity

in the intestinal juice of rainbow trout (*Salmo gairdneri*)

AU Plantikow, Harald

CS Sekt. Biol., Wilhelm-Pieck-Univ., Rostock, DDR-2500, Ger. Dem.

Rep.

SO Wissenschaftliche Zeitschrift der Wilhelm-Pieck-Universitaet Rostock,

Mathematisch-Naturwissenschaftliche Reihe (1981), 30(4-5), 101-4
CODEN: WZWRD5; ISSN: 0323-4681

DT Journal

LA German

AB The intestinal juice volume (volume of the centrifuged intestinal content) and

protease [9001-92-7] activity of rainbow trout were investigated during

the digestion of **casein**- and starch [9005-25-8]-rich

feeds (65 and 60% of feed, resp.). The intestinal juice volume and

the protease activity depended greatly on the feeding interval and on feed

quality. The maximum values of intestinal juice volume and enzyme activity

were found 6 h after ingestion of either feed. Starch-rich feeds leads to

increased intestinal juice volume and a higher **protease** activity as compared to **casein**-rich **feeds**. The rate of

inactivation of protease was greater after feeding the starch-rich ration.

L6 ANSWER 23 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1982:525888 CAPLUS

DN 97:125888

TI Use of some bacterial **proteases** for the preparation of **casein** hydrolyzates

AU Erin, A.

CS USSR
SO Tr. Tallin. Politekhn. In-t (1981), (510), 77-84
From: Ref. Zh., Biol. Khim. 1982, Abstr. No. 11Ch225
DT Journal
LA Russian
AB Title only translated.

L6 ANSWER 24 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1983:141857 CAPLUS
DN 98:141857
TI Study of the possible use of immobilized proteases in the
production of a
nutritive medium for microorganisms
AU Voronkina, I. M.; Voronina, N. G.
CS USSR
SO Biokhimiya i Biofiz. Mikroorganizmov, (Gor'kii) (1981), (9), 54-6
From: Ref. Zh., Biol. Khim. 1982, Abstr. No. 22Ts214
DT Journal
LA Russian
AB Title only translated.

L6 ANSWER 25 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1982:81847 CAPLUS
DN 96:81847
TI Study of casein hydrolysis by immobilized Protosubtilin
AU Neklyudov, A. D.; Denyakina, E. K.; Tsibanov, V. V.; Loginova,
T. A.
CS Vses. Nauchno-Issled. Inst. Tekhnol. Krovezamenitelei Gorm.
Prep., Moscow,
USSR
SO Voprosy Pitaniya (1981), (6), 24-8
CODEN: VPITAR; ISSN: 0042-8833
DT Journal
LA Russian
AB The hydrolysis of Na caseinate by Protosubtilin G10+ (an enzyme
preparation from Bacillus subtilis containing amylase and a
complex mixture of
neutral and alkaline proteinases) immobilized on silica gel was
studied. The
optimum conditions for enzymic reaction were pH 8.5, temperature
60°, and
casein concentration 0.35%. The apparent Km and Vmax values
were 2.48 µmol/mL
and 25.6 µmol/min/mg protein, resp. An empirical equation is
given for
calculating the kinetic parameters of the reaction. The
hydrolyzate contained
various oligopeptides and low concns. of free amino acids (30%).
Overnight incubation of the hydrolyzate with leucine
aminopeptidase at
37° increased the free amino acid content to 80%.

L6 ANSWER 26 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1974:503178 CAPLUS
 DN 81:103178
 TI Use of sodium caseinate as a substrate to measure the
 proteolytic activity
 of enzymic preparations
 AU D'yachenko, P. F.; Sergeeva, V. F.; Evtikhov, P. N.; Bogorad, G.
 V.;
 Vasil'eva, R. P.
 CS All-Union Res. Inst. Milk Ind., Moscow, USSR
 SO Prikladnaya Biokhimiya i Mikrobiologiya (1974), 10(3), 492-4
 CODEN: PBMIK; ISSN: 0555-1099
 DT Journal
 LA Russian
 AB The possible use of Na caseinate as a substrate for the
 measurement of the
 proteolytic activity of enzymic prepns. of microbial origin was
 studied.
 Protease activity was measured by 2 methods using 3 substrates:
industrial casein, Gammersten's **casein**, and Na
 caseinate. All 3 substrates were found acceptable.

L6 ANSWER 27 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1972:524924 CAPLUS
 DN 77:124924
 TI Immunochemical studies on milk components. V. Comparative
 examination on
 the antigenicity of **casein** hydrolyzed by some **proteases**
 AU Tokita, Fumisaburo; Takahashi, Fujio
 CS Coll. Agric., Shinshu Univ., Ina, Japan
 SO Milchwissenschaft (1972), 27(7), 422-6
 CODEN: MILCAD; ISSN: 0026-3788
 DT Journal
 LA English
 AB Expts. were carried out to determine the antigenic properties of
 casein
 hydrolyzed by various **com. proteases** from animals,
 microorganisms, and a plant. Nagarse (*Bacillus subtilis*) and
 fungal
 (*Aspergillus oryzae*) enzymes had high proteolytic activities
 against
 casein, and considerable losses of the antigenic activities were
 found in
 the hydrolyzates. Pronase-P (*Streptomyces griseus*) also had high
 proteolytic activity against casein but low antigenic activity
 was
 retained in the hydrolyzate for a relatively long time. The
 antigenic
 activities of casein hydrolyzed by pancreatin, pepsin, and papain
 gradually decreased and were almost destroyed after 9 hr. The
 casein
 hydrolyzed by trypsin, α -chymotrypsin, pepsin and rennin kept

relatively high antigenic activity, even after 9 hr. The decrease or elimination of the antigenic activity of casein was greatly influenced by

the proteolytic activity and substrate specificity of the protease used.

Furthermore, it may be presumed that the antigenic structure of casein is

cleaved effectively by a protease having pepsin-like substrate specificity. When casein was hydrolyzed by rennin, pepsin, and trypsin,

or by pepsin and trypsin successively, the lowering or elimination of the

antigenic activity of casein was mainly affected by the rate of hydrolysis

of casein by pepsin. The antigen values of casein were decreased more

rapidly by trypsin after partial hydrolysis by pepsin at pH 2.0 than by

trypsin alone.

L6 ANSWER 28 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1971:487329 CAPLUS

DN 75:87329

TI Preparation of cheese from casein

IN Fukumoto, Toshiichiro; Kawamoto, Nagashi

PA Ezaki, Toshiichi

SO Jpn. Tokkyo Koho, 4 pp.

CODEN: JAXXAD

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.
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DATE

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PI	JP 45038501	B4	19701205	JP
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19670218

AB The rapid enzymic hydrolysis method to give process cheeses is described.

Thus, 5 kg com. casein is washed 3 times with 16 l.

tap water, H2O-separated, mixed with 69 l. tap water and 1.27 l. of 10% aqueous

NaOH, dissolved at 80°, deodorized and decolored with active C, mixed with 5 kg plant-origin hardened oil, 83 g DHANa (an antiseptic), and

73 g emulsifier, sterilized 15 min at 80°, homogenized at 60° and 150 kg/cm², cooled to 40°, adjusted to pH 5.3 with 340 g of 50% aqueous lactic acid, reacted 20 min with 13 + 104 units

lysopus[sic]-acidic protease, mixed with 135 g CaCl₂, allowed to stand 10

min, mixed with 6 + 104 units fungusneutral protease, dehydrated to 45-50% H2O content, ripened 7-10 days at 9-10°, and mixed with slight amount of nat. cheese, perfume, emulsifier, and H2O to give a process cheese.

L6 ANSWER 29 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1966:413518 CAPLUS

DN 65:13518

OREF 65:2530f-g

TI Use of casein in assays for proteolytic activity in tissue extracts. A

warning

AU Marrink, J.; Gruber, M.

CS Univ. Groningen, Neth.

SO Biochimica et Biophysica Acta (1966), 118(2), 438-9

CODEN: BBACAQ; ISSN: 0006-3002

DT Journal

LA English

AB Spleen exts. were assayed for proteolytic activity by incubating casein

with the enzyme preparation, precipitating the unsplit protein and polypeptides with

CCl3CO2H, filtering, and then measuring of the absorbance of the filtrate

at 280 mμ. Exts. of spleen gave anomalous results, i.e. a heat-resistant activity. This activity was not proteolytic; specific

methods for peptides (Folin, ninhydrin) gave neg. results. The spurious

activity was traced to the presence in the casein preparation of RNase, which

depolymerized the RNA present in the enzyme preparation Eleven com.

casein preps. from different sources were assayed for RNase and they contained 5-25 γ ribonuclease/g. casein. It is concluded that

tissue exts. containing RNA should not be assayed for (neutral) proteolytic

activity by incubating the enzyme with casein without prior destruction of

the RNase in the casein.

L6 ANSWER 30 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1945:16115 CAPLUS

DN 39:16115

OREF 39:2522d-f

TI Presence of a proteolytic enzyme in casein

AU Warner, Robert C.; Polis, Edith

SO Journal of the American Chemical Society (1945), 67, 529-32

CODEN: JACSAT; ISSN: 0002-7863

DT Journal
 LA Unavailable
 AB This study was the result of the observation that a concentrated solution of **com. casein** (I) in borax rapidly decreases in viscosity with time. The change is accompanied by an increase in the concentration of N products which are soluble at pH 4.6 and in trichloroacetic acid and is abolished by heating the solution at 80° for 10 min. This proteolysis of I solns. is attributed to the presence of an enzyme because: the activity is destroyed by heat, it has a definite pH optimum (8.5), the activity can be concentrated, and the proteolysis proceeds in sterile solns. The enzyme was present in all samples of com. I examined and in all laboratory preps. made by the usual methods. It is not known whether the enzyme is secreted in milk as such or is of bacterial origin. Curves show changes in viscosity and soluble N in a I solution at pH 8.6, in the viscosity of 9.71% I solns., and increase in soluble N as a function of pH. The I solns. in which the enzyme had been destroyed by heat or rendered inactive at a high pH show a slow increase in viscosity (a maximum at pH 10.3), which may be related to a slow structural change in the I.

L6 ANSWER 31 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1946:26265 CAPLUS
 DN 40:26265
 OREF 40:5166h
 TI Cheese and other substances depending on the clotting of milk
 IN Shimwell, John L.; Evans, Jack E.
 PA Norman Evans & Rais Ltd.
 DT Patent
 LA Unavailable
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.
GB 565788		19441128	GB
AB In the manufacture of cheese or casein for industrial purposes or in the production of junket a bacterial proteinase produced by growing bacteria in a nutrient medium is used as the clotting agent for			

milk, by the same procedure as when an animal rennet is used.